

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

CONECTIV DELMARVA GENERATION, INC.
BAYVIEW PEAKING STATION (CHERITON), VIRGINIA
PERMIT NO. 40602VA

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Conectiv Delmarva Generation, Inc. has applied for a Title V Operating Permit for its Bayview Peaking Station (Cheriton), Virginia, facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date:_____

Air Permit Manager:_____ Date:_____

Regional Permit Manager:_____ Date:_____

1. FACILITY INFORMATION

Permittee

Conectiv Delmarva Generation, Inc.
800 King Street, Post Office Box 231
Wilmington, DE 19899-0231

Facility

Bayview Peaking Station (Cheriton)
Route 684 (South of Route 641)
Bayview, Northampton County

AIRS Identification Number: 51-131-00008

2. SOURCE DESCRIPTION.

Standard Industrial Classification (SIC) Code Number 4911- Electric Power Generation. Conectiv Delmarva Generation, Inc.'s Bayview Peaking Station comprises six internal combustion engines for peak electric power generation, each rated at 21 million BTU per hour heat input capacity (two megawatts (MW) each, nominal), two 50,000 gallon #2 distillate fuel oil storage tanks, six 120 gallon distillate fuel oil engine day tanks, six 380 gallon lubricating oil storage tanks, and one engine generator set for emergency backup power to operate telecommunications equipment.

Five internal combustion (IC) engine generator sets were installed in 1963, and are existing equipment, having been installed before, and not modified since, the state's existing source rule effective March 17, 1972. Unit 6, a used IC engine generator set, was installed in the Bayview facility in 1976, and not modified since the Chapter 50, Article 4, rule effectiveness date of August 3, 1979, Standards of Performance for New and Modified Stationary Sources, and PSD rules effective April 3, 1981. The facility was exempt based on size (each engine's rated capacity was less than 3000 HP) from new source review (NSR) requirements (currently Chapter 80-10 of the regulations) dated March 17, 1972, as amended Aug 11, 1972, February 3, 1974, December 20, 1974, and August 9, 1975. The facility could provide backup prime power if required. All six units were rebuilt with new turbochargers before 1996. No operational changes have been made which would require NSR, and all physical changes have been either routine repairs or changes to improve combustion and reduce opacity. Thus, the six units are not considered to have been modified since originally installed.

A generator is connected to its diesel engine several minutes after startup. As the unit is brought up to operating load, the turbocharger engages, and opacity goes from a 10-15 percent range to about 5 percent. Opacity varies with load, but 5 percent is normally achieved at maximum steady-state load.

The facility requires a Title V permit due to its potential to emit (PTE) for NO_x, SO₂, PM₁₀, and CO emissions. The source is located in an attainment area for all pollutants.

3. COMPLIANCE STATUS.

The source is inspected once a year. A scheduled, unannounced inspection in June, 1999, included a visible emissions evaluation (VEE). The source contact was Mr. Jack Hickman. The facility was determined to be in compliance at that time, and after the latest inspection July 17, 2001. There are no NSR permits. Oil deliveries are infrequent, due to the limited operating schedule. Oil sampling of storage tank contents is performed after several deliveries. Average sulfur content of fuel oil was 0.24% in 1994, and 0.13% in 1995. Measured opacity of engines during VEEs conducted by DEQ has varied from 0 to 15 percent.

4. EMISSIONS UNIT AND CONTROL DEVICE IDENTIFICATION.

There are no control devices inventoried for this facility. The emissions units at this facility consist of the following:

URN	Stack No.	Emissions Unit Description	Manufacturer and Date of Installation	Size/Rated Heat Input Capacity, mmBtu/hour
BV10	ST10	Internal Combustion (I.C.) Engine Generator Set No. 1	General Motors (GM)/MP-36/October, 1963	21.0, nominal (2 MW nominal output)
BV20	ST20	I.C. Engine Generator Set No. 2	GM / MP-36 / October, 1963	21.0 (2 MW output)
BV30	ST30	I.C. Engine Generator Set No. 3	GM / MP-36 / October, 1963	21.0 (2 MW output)
BV40	ST40	I.C. Engine Generator Set No. 4	GM / MP-36 / October, 1963	21.0 (2 MW output)
BV50	ST50	I.C. Engine Generator Set No. 5	GM / MP-36 / October, 1963	21.0 (2 MW output)
BV60	ST60	I.C. Engine Generator Set No. 6	GM / MP-36 / 1976	21.0 (2 MW output)

5. EMISSIONS INVENTORY.

Emissions updates were received for calendar years 1996 and 1997. Based on the information in the Title V application, the inventory is accurate. A copy of the annual emissions inventory update reports for calendar years 1996 and 1997 are included as Attachment A.

1997 Actual Criteria Pollutant Emissions in Tons per Year					
Emissions unit	VOC	CO	SO ₂	PM ₁₀	NO _x
BV10	1.0	3.2	1.0	1.0	14.8
BV20	1.0	3.3	1.0	1.0	15.2
BV30	1.1	3.4	1.0	1.1	15.5
BV40	1.0	3.1	1.0	1.0	14.3
BV50	1.1	3.5	1.1	1.1	15.9
BV60	0.8	2.8	0.8	0.9	12.9
TOTAL	6.0	19.3	5.9	6.1	88.6

6. EMISSIONS UNIT APPLICABLE REQUIREMENTS - [BV10-BV60]

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5 Chapter 40, Part II, Article 1: Visible Emissions and Fugitive Dust/Emissions, 9 VAC 5-40-80 (applicable to BV10-BV50)
- 9 VAC 5 Chapter 40, Part II, Article 4: General Process Operations, 9 VAC 5-40-280, 320
- 9 VAC 5 Chapter 40, Part II, Article 37: Petroleum Liquid Storage and Transfer Operations
- 9 VAC 5 Chapter 50, Part II, Article 1: Visible Emissions & Fugitive Dust/Emissions, 9 VAC 5-50-80, effective August 9, 1975 (applicable to BV60)
- 9 VAC 5 Chapter 80, Part II, Article 1: Federal Operating Permits for Stationary Sources
- 9 VAC 5 Chapter 80, Part II, Article 4: Insignificant Activities

Four limit conditions are specified. Condition III.A.1. requires the use of low sulfur distillate oil in emissions units BV10-BV60 to insure compliance with the emissions limit in Condition III.A.4. Condition III.A.2. specifies the maximum sulfur content of fuel combusted in each engine. The methodology for the sulfur dioxide (SO₂) limit computation (specified in the permit) for emission units BV10 to BV60 is:

$$\text{SO}_2 \text{ limit (lb/hr, each)} = 2.64 K, \text{ where } K = 21 \text{ mmBTU/hr heat input capacity/engine.}$$

Since the combustion of 0.5% sulfur fuel will insure actual emissions are less than 20 percent of the emissions limit, SO₂ testing is not required for compliance. Condition III.A.3 specifies visible emissions limits for the emissions streams of emission units BV10-BV50, and BV60.

Monitoring

Condition B.1 requires parametric monitoring during both manned and unmanned operations. The source maintains remote gas temperature monitoring, telemetry, and alarm notification systems to maintain efficient combustion, and minimize the likelihood of excessive visible emissions. Condition III.B.2. specifies the periodicity of Method 9 evaluations. Condition III.B.3. specifies fuel certification requirements.

Recordkeeping

Condition III.C.1 requires development of a maintenance schedule and maintenance records for scheduled and nonscheduled maintenance of process equipment or air pollution control equipment, and an inventory of spare parts needed to minimize durations of air pollution control equipment breakdowns.

Condition III.C.2.a. specifies fuel sulfur content recordkeeping. Conditions III.C.2.b. requires a record of calendar year operating hours. Conditions III.C.2.c. specifies the quarterly and annual calculations of emissions required to demonstrate compliance. Condition III.C.2.d. specifies visible emission recordkeeping requirements. Condition III.C.2.e. requires parametric monitoring records that indicated the potential for excess emissions during remote operations.

Testing

No emissions testing is specified. The source is limited by Condition III.A.1. to low sulfur distillate oil, with less than 0.5% sulfur content. Hourly emission limit is based on 2.64% sulfur. At maximum heat input, SO₂ emissions will therefore be less than 19% of the permit limit.

7. GENERAL CONDITIONS.

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

8. FUTURE APPLICABLE REQUIREMENTS.

There are no future applicable requirements for this source.

9. INAPPLICABLE REQUIREMENTS.

NSPS Subpart Kb - Federal new source performance standards (NSPS), Subpart Kb, do not apply to two fuel oil storage tanks BV100 and BV101, fuel oil day tanks BV110-BV115, and lubrication oil tanks BV120-BV125. Fuel oil storage tanks BV100 and BV101, and day tanks BV110-BV115 were installed before, and not modified after, the 1984 applicability date for that standard. Day tanks BV110-BV115, and lubrication oil storage tanks BV120-BV125 have maximum capacities less than 10,000 gallons each.

Article 4 in Chapter 40 - The particulate standard in Article 4 of Chapter 40, Part II, of state regulations does not apply to the six IC engines BV10-BV60, because the definition of “process weight”, upon which the limits are based, excludes liquid fuels. The sulfur dioxide (SO₂) standard in Article 4 does apply, however.

Article 4 in Chapter 40 - Fuel oil storage tanks BV100, BV101, and BV110-115 do not have opacity monitoring requirements, although the existing source rule regulating these units indicates an opacity requirement. This is justified by comparing state requirements with NSPS Subpart Kb. This NSPS does not require an opacity limit and monitoring, so it was determined that a visible emissions standard and evaluation are not necessary in this case.

Article 8 in Chapter 40, Part II- This fuel burning emissions unit regulation does not apply to emissions units BV10-BV60 because IC engines are excluded from its definition of “fuel burning equipment”.

Article 37 in Chapter 40, Part II- This regulation does not apply to storage tanks BV100, BV101, BV110-BV115, and BV120-BV125 because the vapor pressures of fuel oil and lubrication oil are below the article’s applicability threshold of 1.5 psia for liquids in service by a storage tank.

Article 4 in Chapter 50, Part II- This regulation does not apply to existing emissions units (BV10 to BV50), nor to new emissions unit BV60, because they were installed before, and not modified after, the rule’s effectiveness date of August 3, 1979.

10. INSIGNIFICANT EMISSIONS UNITS.

Under 9 VAC 5-80-720, the source has categorized two #2 fuel oil storage tanks (BV100 and 101), six day tanks (BV110-115), six lube oil storage tanks (BV120-125), and an emergency generator as insignificant based on low uncontrolled emission levels. These emissions units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting is required for these emissions units in accordance with 9 VAC 5-80-110.

The citation criteria for insignificant activities are as follows:

- 9 VAC 5-80-720 A - Listed insignificant activity, not included in permit application
- 9 VAC 5-80-720 B - Insignificant due to emission levels
- 9 VAC 5-80-720 C - Insignificant due to size or production rate.

11. CONFIDENTIAL INFORMATION.

The source has not requested confidentiality for any information submitted as part of, or in support of, the Title V operating permit application.

12. PUBLIC PARTICIPATION.

A public notice regarding the draft permit was placed in The Eastern Shore News on June 23, 2001. Public comments were solicited through July 23, 2001. No comments on the draft permit were received.